Section 1, Identification

Chemical Name: **FERROUS ALLOY**
Trade name (Label Identity): **Whitney Tool Co. MILLING CUTTERS**
Common Name: **High Speed Steel**

Section 2, Hazard(s) identification

We do not consider this product in the form it is sold to constitute a physical hazard or a health hazard. Subsequent operations such as abrading, melting, welding, cutting or processing in any other fashion may produce potentially hazardous dust or fume which can be inhaled, swallowed or come in contact with the skin or eyes.

**EFFECTS OF EXPOSURE:**
No toxic effects would be expected from exposure to the solid form of specialty steel. Prolonged, repeated exposure to fumes or dusts generated during heating, cutting, brazing or welding may or may not cause adverse health effects associated with the listed constituents in excess of OSHA permissible exposure limits established in 29 CPR Subpart 2 (See Section II)

**PRIMARY ROUTES OF ENTRY**
**Inhalation** - Remove to fresh air. If condition continues, consult a physician.
**Eye Contact** - Flush well with running water to remove particulate. Get medical attention.
**Skin Contact** - Brush off excess dust. Wash area well with soap & water.
**Ingestion** -

Section 3, Composition/information on ingredients

<table>
<thead>
<tr>
<th>Element</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td></td>
</tr>
<tr>
<td>Chromium</td>
<td></td>
</tr>
<tr>
<td>Manganese</td>
<td></td>
</tr>
<tr>
<td>Molybdenum</td>
<td></td>
</tr>
<tr>
<td>Vanadium</td>
<td></td>
</tr>
<tr>
<td>Carbon</td>
<td></td>
</tr>
<tr>
<td>Tungsten</td>
<td></td>
</tr>
<tr>
<td>Silicon</td>
<td></td>
</tr>
</tbody>
</table>
Section 4, First-aid measures

Inhalation - Remove to fresh air. If condition continues, consult a physician.

Eye Contact - Flush well with running water to remove particulate. Get medical attention.

Skin Contact - Brush off excess dust. Wash area well with soap & water.

Ingestion - Seek medical help if large quantities of material have been ingested.

Section 5, Fire-fighting measures

There is no flashpoint noted for this product.

Section 6, Accidental release measures

There is no data on release of solid metal inhalation hazards may be encountered when product is heated ventilation is required.

Section 7, Handling and storage

No restrictions apply.

Section 8, Exposure Limits/personal protection

Personal Protective Equipment:

Respiratory protection - misting or dust condition occurs and T.L.V. as indicated in Section 8 below is exceeded, provide NIOSH approved respirators.

Recommend approved safety glasses or goggles when working with dusty material.

Gloves: As Required

Other Clothing or Equipment: As Required

Permissible Exposure Limits

<table>
<thead>
<tr>
<th>Material or Component</th>
<th>CAS No.</th>
<th>OSHA PEL (Mg/M³)</th>
<th>ACGIH TLV (Mg/M³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt</td>
<td>7440-48-4</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
<td>1.0</td>
<td>.50</td>
</tr>
<tr>
<td>manganese</td>
<td>7439-96-5 (Dust)</td>
<td>5 (Ceiling)</td>
<td>5 (Ceiling)</td>
</tr>
<tr>
<td>carbon</td>
<td>1333-86-4</td>
<td>3.5</td>
<td>3.5 (As Carbon Black)</td>
</tr>
<tr>
<td>silicone</td>
<td>7440-21-2 (Dust)</td>
<td>---</td>
<td>5.0</td>
</tr>
<tr>
<td>Iron</td>
<td>1309-37-1</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>molybdenum</td>
<td>7439-98-7</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>vanadium</td>
<td>1314-62-1 (Dust) (Fume)</td>
<td>5 (Ceiling)</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.1 (Ceiling)</td>
<td>.05</td>
</tr>
<tr>
<td>tungsten</td>
<td>7440-33-7</td>
<td>---</td>
<td>5</td>
</tr>
</tbody>
</table>
Section 9, Physical and chemical properties

HAZARDOUS DECOMPOSITION PRODUCTS: Metallic Oxides
Boiling Point: 5000°F
Melting Point: Approx. 2500°F
Specific Gravity (H₂O=1): Approx 7.8-8.2 (60°F)
Vapor Pressure: N/A
Vapor Density (Air=1): N/A
Solubility in Water: Insoluble
% Volatiles by Volume: N/A
Evaporation (Butyl Acetate =1): N/A

Section 10, Stability and reactivity

STABILITY: Chemically Stable
INCOMPATIBILITY: Reacts with Strong Acids to Generate Hydrogen Gas

Section 11, Toxicological information

EFFECTS OF EXPOSURE: No toxic effects would be expected from exposure to the solid form of specialty steel. Prolonged, repeated exposure to fumes or dusts generated during heating, cutting, brazing or welding may or may not cause adverse health effects associated with the listed constituents in excess of OSHA permissible exposure limits established in 29 CFR Subpart 2

Regarding carcinogenicity

- Cobalt is listed as an animal carcinogen (A3) by ACGIH and as possibly carcinogenic to humans (2B) by IARC

Cobalt is "known to the state of California to cause cancer." (Proposition 65)

Section 12, Ecological information* None known

Section 13, Disposal considerations*
WASTE DISPOSAL METHOD: Solids – Sale as Scrap for Reuse
Dust, ect. – Follow Federal, State and Local Regulations

Section 14, Transport information* No DOT regulations applicable

Section 15, Regulatory information* see section 8 for exposure limits

Section 16, Other information, USE GOOD HOUSEKEEPING PRACTICES TO PREVENT ACCUMULATIONS OF DUST AND TO KEEP AIRBORNE DUST CONCENTRATIONS AT A MINIMUM. THIS MATERIAL IS POTENTIALLY CONTAMINATED WITH COATINGS SUCH AS OILS FOR PRESERVATIVES AND OTHER CONTAMINANTS. IF THE MATERIAL IS CONTAMINATED, SPECIAL PRECAUTIONS (SUCH AS PROCESS CONTROL AND PERSONAL PROTECTIVE EQUIPMENT APPROPRIATE TO THE NATURE OF THE
SUSPECTED CONTAMINANTS SHOULD BE TAKEN TO AVOID RESULTING EXPOSURES WHEN HANDLING, CUTTING (THERMAL OR MECHANICAL) AND/OR HEATING OR MELTING.
While the information set forth on this material safety data sheet is believed to be accurate, as of the effective date, Whitney Tool Co. makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage, or injury of any kind which may result from or arise out of the use or reliance on the information by any person.

Date prepared April 2018

* Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).

Employers must ensure that SDSs are readily accessible to employees.